

REMARKS

Reconsideration of this application and the rejection of claims 1-24 are respectfully requested. Applicants have attempted to address every objection and ground for rejection in the Office Action dated October 6, 2008 (Paper No. 20080925) and believe the application is now in condition for allowance. The specification and the claims have been amended to more clearly describe the present invention.

Claim 17 is objected to because the Examiner states that the phrase “the method according to claim 1” does not correspond to claim 1, which is a claim for a device. Applicants have amended claim 17 to depend from claim 11, which is a method claim.

Claim 19 is objected to because the Examiner states that the terms “analyser and “defocussed” in this claim are misspelled. Applicants have amended the terms “analyser” and “defocussed” to respectively be “analyzer” and “defocused.”

For the above reasons, Applicant respectfully requests that the objections to claims 17 and 19 be withdrawn.

Claims 1-4 and 11-13 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,877,856 to Fercher. Applicants disagree with and traverse this rejection for the following reasons.

Fercher discloses an arrangement and method for increasing contrast in optical coherence tomography by scanning an object with a dual beam. The arrangement includes an Optical Coherence Tomography device (OCT) based on a standard Michelson interferometer (i.e., interferences are based on two arms of similar optical lengths: a reference arm and a

measurement arm). The Michelson interferometer includes a standard arm extending around a standard (non-polarizing) beam splitter 7.

Specifically, a partially coherent light source 5 emits a spatially coherent light bundle 6 towards the beam splitter 7 (Col. 3 lines 1-4). The light bundle 6 is reflected by the beam splitter 7 as interferometric reference light bundle 8 to the reference mirror 9 and partly as interferometric measurement light beam 2 into the measurement arm of the interferometer. The measurement arm therefore extends “from the beam splitter 7 to the scattering location 4” (i.e. to the observed point) (Col. 3, lines 13-15). Also, the reference arm extends “from the splitter surface 7” which is included in the beam splitter 7, “to the deflecting mirror 9” (also called reference mirror 9). The output arm is the part where the light is directed from the beam splitter 7 to the photodetector 11 (col.3 line 12), and creates an interferometric signal IS (col.4 line 61).

Fercher discloses creating a dual beam of linearly polarized waves 17' or 17" (Fig.3; Col.5 line 21-30) by means of a Wollaston prism 18 (or of a polarizer P)(Col.6, line 60; Figs.6 and 7). As clearly described in the specification and in all figures, Fercher only discloses such polarization in the measurement arm, between the beam splitter 7 and the observed point 4 or 14' or 14" (Fig.3). Fercher uses this polarization in the measurement arm for illuminating two adjacent points (14' or 14") of the observed object within an OCT device undergoing a scanning observation.

In contrast, claim 1 recites, among other things, a device for measuring the contrast of fringes in a full-field Michelson interferometer having at least one reference arm

and one measurement arm co-operating with an output arm in order to produce an optical coherence tomography (OCT) system including “means for deflecting two incoming perpendicular polarizations in two different emerging directions, said means for deflecting being arranged within the output arm interferometer as a substitution for a single polarizer.”

(Emphasis Added). Fercher does not disclose such subject matter.

The Michelson interferometer recited in claim 1 includes an OCT device with a “full-field” structure, i.e. where a full area of an object is observed simultaneously (on a given z depth). Therefore, individual points of an observed target do not have to be scanned. Fercher, on the other hand, discloses imaging two points (i.e., individual points) by two polarized measurement beams.

Furthermore, the “full field” feature of the claimed invention is achieved through a specific optical configuration, leading to different advantages in a different approach. The structure recited in claims 1 and 11 achieve this feature. Specifically, claim 1 recites, among other things, “means for deflecting different polarizations” that are “arranged in the output arm,” and claim 11 recites, among other things, the step of deflecting “two incoming perpendicular polarizations in two different emerging directions, by means of a Wollaston prism situated in said output arm” (Emphasis Added). The polarization means in both claims 1 and 11 are therefore located in the output arm.

In an OCT device, each point of an object is observed successively (i.e., scanning process commonly known as “SLO technology”). Fercher discloses observing each of these points as two separate adjacent points (i.e., reference numbers 14' or 14" shown in Figs. 2 and

3) with locally polarized and deflected beams 17' or 17". The polarization occurs in the measurement arm (between the beam splitter 7 and the points 14' or 14") (Fig. 3; Col. 5, lines 12-28) for illuminating the two adjacent points 14' or 14" of the observed object and not in the output arm as recited in claims 1 and 11.

For at least these reasons, Applicants submit that claims 1 and 11, and the claims that depend from these claims, are each patentably distinguished over Fercher and in condition for allowance.

Claims 5-10 and 14-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fercher. Claims 5-10 and 14-16 respectively depend from claims 1 and 11. As stated above, Fercher fails to disclose the subject matter of claims 1 and 11. Applicants therefore submit that claims 5-10 and 14-16 are each patentably distinguished over Fercher.

Claims 17-20 and 22-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Fercher and U.S. Publication No. 2003/0218755 to Wei et al. Fercher does not disclose or suggest the subject matter of claims 1 and 11. Claim 20 discloses similar subject matter to claims 1 and 11. Specifically, claim 20 recites, among other things, a system for examining the eye by in vivo tomography that includes "a device for measuring the contrast of fringes in a full-field Michelson interferometer, said device comprising in the output arm means for deflecting two incoming polarizations in two different emerging directions"(Emphasis Added). As stated above, Fercher fails to disclose or suggest polarization that occurs in the output arm. Wei discloses an OCT optical scanner

that is cited to teach “carrying out the correction of . . . wavefronts originating from the eye as well as those reaching the eye” (Office Action, page 9). Wei does not disclose or suggest polarization that occurs in the output arm and therefore does not remedy the deficiencies of Fercher.

For these reasons, Applicants submit that claim 20, and the claims that depend therefrom, each patentably distinguished over the combination of Fercher and Wei and in condition for allowance.

Claims 17-19 depend from claim 11. The combination of Fercher and Wei fails to disclose or suggest the subject matter of claim 11. Accordingly, Applicants submit that claims 17-20 are each patentably distinguished over the combination of Fercher and Wei for the reasons provided above.

Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Fercher, Wei and U.S. Patent No. 5,883,692 to Agonis et al. As stated above, the combination of Fercher and Wei fails to disclose the subject matter of claim 20. Agonis teaches a visual field measurement apparatus including a sighting device having a fixation structure 20 located at a central location of the viewing area 10 and stimuli target 40. Agonis does not disclose or suggest polarization that occurs in the output arm and therefore does not remedy the deficiencies of Fercher and Wei.

Accordingly, Applicants submit that claim 21 is patentably distinguished over the combination of Fercher, Wei and Agonis and in condition for allowance.

US Serial No. 10/586,897
Amendment Dated: January 6, 2009
Response to Office Action Dated: October 6, 2008

Applicants submit that in view of the above-identified amendments and remarks, the claims in their present form are patentably distinct over the art of record. Allowance of the rejected claims is respectfully requested. Should the Examiner discover there are remaining issues which may be resolved by a telephone interview, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

Customer No. 24978
January 6, 2009
300 South Wacker Drive
Suite 2500
Chicago, Illinois 60606
Telephone: (312) 360-0080
Facsimile: (312) 360-9315

GREER, BURNS & CRAIN, LTD.

By /Christopher S. Hermanson/
Christopher S. Hermanson
Registration No. 48,244